REMARKS

This Response is submitted in reply to the Final Office Action dated December 30, 2009 in conjunction with the enclosed Request for Continued Examination. Claims 23 to 37 are pending in the present application. Claims 23, 26 and 29 are hereby amended. No new matter has been added by such amendments. Claims 23, 26 and 29 are in independent form. Please charge Deposit Account No. 02-1818 for all payments due in connection with this Response.

As noted above, Applicant has filed a Request for Continued Examination with this Response. Accordingly, Applicant requests that the Examiner provide an upcoming Office Action which will ". . . identify any claims which he or she judges, as presently recited, to be allowable and/or . . . suggest any way in which he or she considers that rejected claims may be amended to make them allowable" in accordance with §707.07(d) of the MPEP.

The Office Action rejected Claims 23 to 37 under 35 U.S.C. § 112. Applicant has amended independent Claims 23, 26 and 29 and submits such amendments overcome these rejections.

The Office Action rejected Claims 23 to 31, 33, 35 and 37 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,978,560 to Tan et al. ("Tan"), in view of U.S. Patent No. 6,728,905 to Gnanasivam et al. ("Gnanasivam"), U.S. Patent No. 5,031,089 to Liu et al. ("Liu"), U.S. Patent No. 6,314,447 to Lea et al. ("Lea") and U.S. Patent No. 6,535,977 to Holle et al. ("Holle").

Tan discloses load balancing of distributed printing systems using enhanced printer attributes. The Abstract of Tan discloses:

> A distributed printing system that more optimally distributes job requests within a distributed printing system based on more detailed information about the particular attributes of each output device. In particular, additional printer attributes are used that allow greater utilization of a plurality of attached printers having differing capabilities. These attributes include "max-concurrent-jobs-processing" (MCJP), "number-of-jobs-on-device" (NJOD) and "number-of-cascaded-jobs" (NCJ), and a attribute value "saturated" for the attribute "printer-state". The attribute MCJP is an integer value that is based on the capabilities of the printer. NJOB and NCJ attributes allow monitoring of jobs sent to each printer for supported and unsupported printers. If NJOB or NCJ are greater than MCJP, then the attribute "printer-state" is set to "saturated", prohibiting further spooling of print jobs to that particular printer.

Fig. 1 of Tan (reproduced below) illustrates an exemplary client/server distributed printing system.
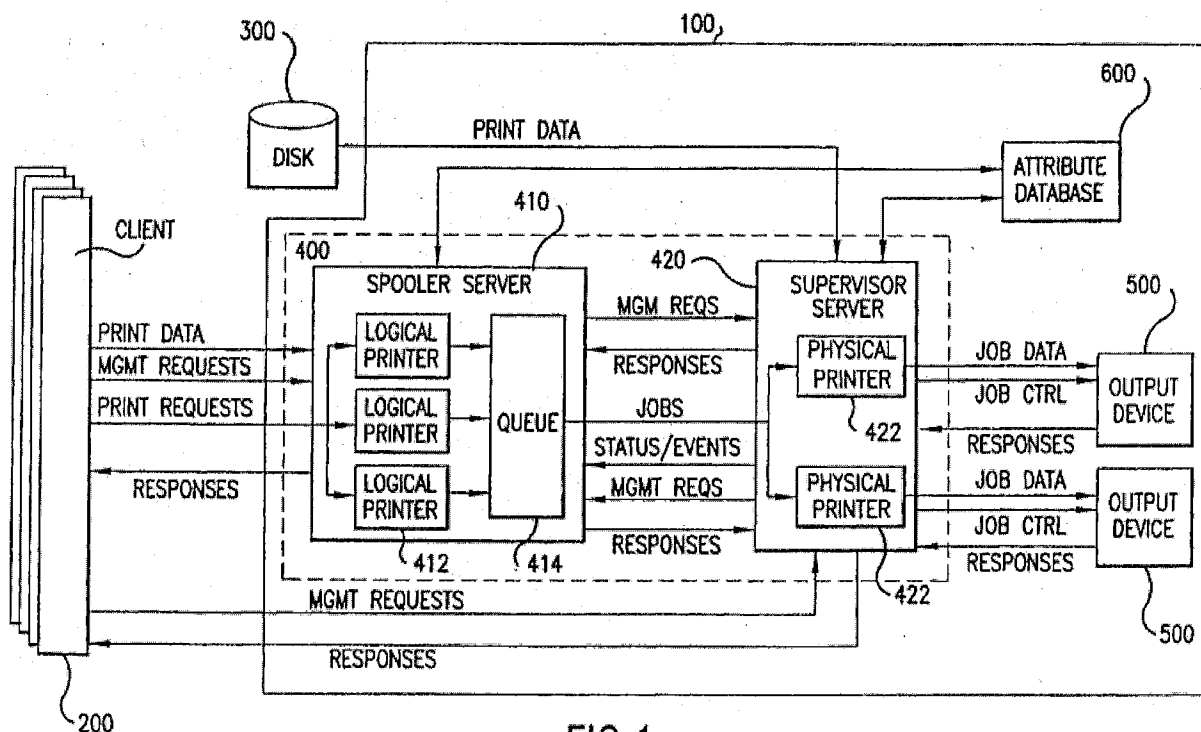

FIG. 1

Column 3, lines 23 to 28 of Tan discloses, with emphasis added:

The supervisor server 420 delivers data to one or more of the output devices 500. The supervisor 420 also receives jobs from the spooler 410, interprets job requests for print submission, receives print data, passes the data and the job control commands to an appropriate output device 500, and handles any responses made by the output devices 500.

Column 3, line 57 to column 4, line 23 of Tan discloses:

As shown in FIG. 2, a larger network client/server system can have numerous logical printers associated with numerous physical printers through a plurality of queues. This type of system is capable of load balancing, in which jobs can be directed to alternate printers associated with the same queue. The alternate printers also provide printing characteristics required by an associated logical printer.

Such a distributed printing system uses objects to represent various entities, such as the logical printers, the physical printers and/or the queues, although objects can represent the spoolers and the supervisors as well. An object contains a

collection of attributes that provide information about the object. Examples of printer attributes are:

printer-name: a single-valued attribute whose value is a name that uniquely identifies a logical or physical printer.

media-supported: a multi-valued attribute whose values identify the media that the printer supports, such as "iso-A4 white".

printer-state: a single-valued attribute that indicates the current status of a printer, such as "idle" or "printing".

Each object is defined by this set of attributes, which can contain static and dynamic attributes. The spooler 410 and supervisor 420 manipulate the object representation of an entity they are operating on by setting or changing the values of the object's attributes. For those attributes that can be manually changed, a user can observe the value of an attribute with a "list attributes" command and change the value of an attribute with a "set attributes" command. The print capabilities of a print system are limited by the predefined set of system attributes fixed for each printing system.

Page 4 of the Office Action stated that Tan teaches:

an information processing apparatus (print server/supervisor), which is coupled to a plurality of other information processing apparatuses (other printers/output devices) through a network, transmitting a software cell including a command (job ctrl) and a program (job data) to the other information processing apparatuses, and carrying out network distributed processing (Tan: abstract, Figure 1, Figure 3, col 2, lines 45-64)

In view thereof, it appears that the Office Action interprets the data that is delivered by the supervisor server 420 of Tan to the output devices 500 as the software cell of the information apparatus of amended independent Claim 23. Under this interpretation, Applicant submits that the data that is delivered by the supervisor server of Tan does not include a direct memory access command, wherein each of the other information processing apparatuses are configured to execute the transmitted direct memory access command. Moreover, Applicant submits that the "JOB CTRL" illustrated in Fig. 1 of Tan does not include a direct memory access command. That is, unlike the information apparatus of Claim 23, the information processing apparatus resulting from the combination of Tan, Gnanasivam, Liu, Lea and Holle does not anticipate or render obvious (without improper hindsight reconstruction) "capability exchange means for . . .

creating an apparatus information table by: (i) for each of the other information processing apparatuses, transmitting one of a plurality of first software cells to said other information processing apparatus, said transmitted first software cell including a direct memory access command, each of said other information processing apparatuses being configured to execute said transmitted direct memory access command."

Additionally, Pages 4 to 5 of the Office Action stated that Tan teaches:

capability exchange means for . . . creating an apparatus information table by transmitting software cells to all the other information processing apparatuses on the network (Tan: abstract; col 3, line 57 – col 4, line 23), wherein the apparatus information table includes apparatus data associated with all the other information processing apparatuses when the information processing apparatus is in a particular state (Tan: col 3, line 57 – col 4, line 23), and wherein the apparatus information table includes identifications associated with all the other information processing apparatuses and the statuses associated with all the other information processing apparatuses on the network when the information processing apparatus is in a particular state (Tan: col 3, line 57 – col 4, line 23), the software cells requesting transmissions of information regarding the other information processing apparatuses and receiving software cells as replies from the other information processing apparatuses (Tan: col 5, lines 51-55)

In view thereof, as best understood by the Applicant, it appears that the Office Action interprets the objects of Tan as the apparatus information table of the information processing apparatus of amended Claim 23. As described above, the objects of Tan are defined by a set of attributes, which can contain static and dynamic attributes (Tan, column 4, lines 12 to 13). The spooler and supervisor of Tan "manipulate the object representation of an entity by setting or changing the values of the object's attributes." (Tan, column 4, lines 13 to 16). For the attributes that can be manually changed, a user can change the value of an attribute with a "set attributes" command. (Tan, column 4, lines 16 to 19). The objects of Tan (interpreted as the information table of Claim 1) are not created by, for each of the other information processing apparatuses, transmitting one of a plurality of first software cells to all the other information processing apparatuses on the network, said transmitted first software cell including a direct memory access command, each of said other information processing apparatuses being configured to execute said transmitted direct memory access command and for each of the other information processing apparatuses, receiving one of a plurality of second software cells as a reply from the other information processing apparatuses, said received second software cell

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including a status return command. That is, unlike the information processing apparatus of amended independent Claim 23, the information processing apparatus resulting from the combination of Tan, Gnanasivam, Liu, Lea and Holle does <u>not</u> anticipate or render obvious (without improper hindsight reconstruction) capability exchange means for creating an apparatus information table by, for each of the other information processing apparatuses, transmitting one of a plurality of first software cells to all the other information processing apparatuses on the network, said transmitted first software cell including a direct memory access command, each of said other information processing apparatuses being configured to execute said transmitted direct memory access command and for each of the other information processing apparatuses, receiving one of a plurality of second software cells as a reply from the other information processing apparatuses, said received second software cell including a status return command.

For at least these reasons, it is respectfully submitted that independent Claim 23 is patentably distinguished over Tan, Gnanasivam, Liu, Lea and Holle and in condition for allowance. Dependent Claims 24, 25 and 33 depend directly from amended independent Claim 23 and are also allowable for the reasons given with respect to Claim 23 and because of the additional features recited in these claims.

Independent Claims 26 and 29 each include certain similar elements to independent Claim 23. For reasons similar to those discussed above with respect to independent Claim 23, independent Claims 26 and 29 (and dependent Claims 27, 28, 30, 31, 35 and 37) are each patentably distinguished over Tan, Gnanasivam, Liu, Lea and Holle and in condition for allowance.

The Office Action rejected Claims 32, 34 and 36 under 35 U.S.C. § 103(a) as being unpatentable over Tan in view of Gnanasivam, Liu, Lea, Holle and U.S. Patent No. 6,088,516 to Kreisel et al. ("Kreisel"). Applicant respectfully submits that the patentability of Claims 23, 26 and 29 renders these rejections moot.

An earnest endeavor has been made to place this application in condition for formal allowance, and allowance is courteously solicited. If the Examiner has any questions regarding this Response, Applicant respectfully requests that the Examiner contact the undersigned.

Respectfully submitted,

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